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EXAMINER				
MELLON, DAVID C				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/564,118

**Applicant(s)**

BRASSARD, LOTHAR A.

**Examiner**

DAVID C. MELLON

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 24-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-14, 16-23, and 27 is/are rejected.
- 7) ☒ Claim(s) 11 and 15 is/are objected to.
- 8) ☒ Claim(s) 1-27 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 20060616
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

- Group I, claim(s) 1-23 and 27, drawn to a magnetic separator.
- Group II, claim(s) 24-26, drawn to a method for targeting a particular substance from a mixture.

2. The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical feature is a magnetic device using two limbs with an air gap and a head piece which contains a magnet bar, however, this does not provide contribution over the prior art. Franzreb et al. (DE 101 17 659, see USP 7,223,345 as English language equivalent) discloses a HGMS unit (abstract) with two limbs (5A and 5B) with an air gap (conduit 4 forms an air gap between the two limbs) and a magnet bar (9) in rotatable system (10).

3. During a telephone conversation with William Schwarze on 6/26/2009 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-23 and 27. Affirmation of this election must be made by applicant in replying to

this Office action. Claims 24-26 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

### ***Drawings***

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims.

Therefore, the:

- Electric motor, pneumatic or hydraulic drive of claim 9
- Electromotive drive of claim 15
- Program-controlled laboratory robot system of claim 20
- Control unit of claim 21
- Program controlled processor and associated connections and sensors needed to provide for control of claim 22

- Heating or cooling means, pipetting station, suction means, shaking or intermixing means, and photometric or luminescence analytical means of claim 23

must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**7. Claims 5, 8, 17-21, and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Regarding claim 5, the limitation "from outside and then again out of" renders the claim indefinite because it is unclear as to what specific motion is actually occurring with the magnet.

Claim 17 recites the limitation "the bars" in line 4. There is insufficient antecedent basis for this limitation in the claim. There was no previous recitation of multiple bars.

Regarding claim 22, the claim is rendered indefinite because it is unknown what specific structure is imparted by the program-controlled processor. Accordingly, it is well known that processor/controllers require input and output systems in order to operate within their needed parameters and further require linkage to the device to be controlled. Additionally, it is unknown as to what specific structure is imparted by open-loop, closed-loop or "coordinated function" control. Do these provide structure or merely do they provide functional language without associated structure?

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**9. Claims 1-10, 12-13, 22, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Franzreb et al. (WO 02/081092), see English language equivalent, USP 7,223,345).**

Regarding claim 1, Franzreb discloses in figures 1 and 2 a device for separating magnetic or magnetizable particles from a liquid by using a magnetic field (Abstract) comprising:

- Two limbs made of a soft-magnetic material, each limb forming a magnetic pole (5a, 5b)
- An air gap (space in which conduit/pipe system C3/L54-62) between the two poles of the limbs, the air gap being suitable for receiving at least one container (see pipe system clearly is a container)
- A head piece arranged in a fixed manner on one of the two poles and at least one magnetizable bar disposed vertically in a fixed manner on the head piece (filter 8 with pole faces 6)
- At least one permanent magnet movably arranged on at least one point of the device for producing a magnetic field between the two poles, wherein the magnetic field is activated or deactivated by moving the magnet (magnet 9, see also C4/L25-40)
- A material arranged at least partially surrounding a region of the device where the at least one movable magnet is located to screen the magnetic field (10 - rotor encases magnet).

Regarding claim 2, Franzreb further discloses the two limbs (5a,b) are connected together at a side opposite the poles, forming a magnetic circuit (C3/L60-67, see also in figure 2 when the magnet is rotated to connect the poles).

Regarding claim 3, Franzreb further discloses the movable magnet is arranged to be movable within the magnetic circuit (C4/L9-20).

Regarding claim 4, Franzreb further discloses the movable magnet is arranged to be rotatable within the magnetic circuit (C4/L9-20).

Regarding claim 5, Franzreb further discloses the movable magnet is arranged to be movable into the circuit from outside and then out of the circuit (C4/L9-20).

Regarding claim 6, Franzreb further discloses the movable magnet is arranged to be movable within the magnetic circuit (C4/L9-20).

Regarding claim 7, Franzreb further discloses the movable magnet is arranged to be displaceable within the magnetic circuit (C4/L9-20).

Regarding claim 8, Franzreb further discloses the movable magnet is arranged to be movable on a rotatable support (rotor 10) within the magnetic circuit (C4/L9-20).

Regarding claim 9, Franzreb further discloses the movement of the magnet is accomplished by an electric motor, pneumatic or hydraulic drive (drive 13, see also C4/L15-50).

Regarding claim 10, Franzreb further discloses an extent of movement of the at least one movable magnet can be predetermined to set a magnetic field strength to a desired value (C4/L28-38).



Regarding claim 12, the apparatus of Franzreb and further the head piece is capable of being shaken as a whole and further is capable of being moved in a horizontal plane.

Regarding claim 13, Franzreb further discloses a plurality of magnetizable bars in rows (6).

Regarding claim 22, Franzreb further discloses a program-controlled processor with the device by which the movement of the magnet is controlled in open or closed loop manner (C4/L9-16 - switch is a processor, also see C3/L20-30).

Regarding claim 27, Franzreb further discloses a method for separating a target substance from a mixture of substances using the device of claim 1 (Abstract).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**12. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Franzreb et al. (WO 02/081092), see English language equivalent, USP 7,223,345).**

Regarding claim 14, Franzreb does not explicitly disclose a head piece detachable to one of the poles. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the head piece to be detachable for the purpose of allowing for replacement of the head piece. Further, it is well known to make a component non-integral and detachable.

**13. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Franzreb et al. (WO 02/081092), see English language equivalent, USP 7,223,345) and in view of Gombinsky et al. (USP 6,409,925).**

Regarding claim 16, Franzreb does not explicitly disclose a strippable replaceable sheath or envelope on the magnetizable bar.

Gombinsky et al. discloses a device for collection of magnetic particles (Abstract) which uses a disposable cover over a magnetizable tip (C7/L15-25).

Franzreb and Gombinsky et al. are combinable because they are concerned with the same field of endeavor, namely that of magnetic separators.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the magnetizable bar (pole head 6) to further include a replaceable cover as taught by Gombinsky for the purpose of protecting the bar from damage during operation and movement of the apparatus.

**14. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Franzreb et al. (WO 02/081092), see English language equivalent, USP 7,223,345) and in view of Kamibayashi et al. (USP 6,270,666).**

Regarding claim 23, Franzreb does not explicitly disclose a heating or cooling means in connection with the separator.

Kamibayashi et al. discloses a yoke based magnetic separator (Abstract), see also figure 1 wherein during the process, the separator is hooked in series with heaters and coolers (C6/L1-15).

Franzreb and Kamibayashi et al. are combinable because they are concerned with the same field of endeavor, namely that of magnetic separators.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the separator of Franzreb to further include heating and cooling means as taught by Kamibayashi for the purpose of temperature regulation of fluid to be separated.

***Allowable Subject Matter***

15. Claims 11 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. Claims 17-21 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

17. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not suggest or provide a teaching which would provide for a head piece with multiple magnetic bars in a vertical orientation that are designed to go into a container such as a microtiter or similar tray where the bars are configured to act in a manner similar to a pipet. Further, the prior art of record makes no mention or teaching to support the use of a short circuit ring in a magnetic separator. Additionally, the prior art of record does not teach or suggest such a combination of a separator of the type such as in USP 7,223,345 as being combinable with a robotic micropipetting/microwell system. Furthermore, the prior art of record does not set forth motorized control of the magnetizable bar system or of the container.

#### ***Conclusion***

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Forssberg et al. (USP 4,122,005)
- Li et al. (USP 4,988,618).
- Smith et al. (USP 4,272,510)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID C. MELLON whose telephone number is (571)270-7074. The examiner can normally be reached on Monday through Thursday 7:00am-4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on (571) 272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tony G Soohoo/  
Primary Examiner, Art Unit 1797

/D. C. M./  
Examiner, Art Unit 1797